

The Honorable Barbara J. Rothstein

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF WASHINGTON  
AT SEATTLE

TELEBUYER, LLC,

Plaintiff,

v.

AMAZON.COM, INC., AMAZON WEB  
SERVICES LLC, and VADATA, INC.,

Defendants.

AMAZON.COM, INC., AMAZON WEB  
SERVICES LLC, and VADATA, INC.,

Counterclaimants,

v.

TELEBUYER, LLC,

Counterclaim-  
Defendant.

Case No. 2:13-cv-01677-BJR

**AMAZON'S SUBMISSION OF  
PROPOSED TECHNICAL ADVISOR IN  
RESPONSE TO COURT'S NOVEMBER  
5, 2014 MINUTE ENTRY**

1 Pursuant to the Court's November 5, 2014 Minute Entry (D.I. 175), Amazon submits the  
2 following name as a potential technical advisor:

3 Professor James Kurose  
4 Department of Computer Science  
5 University of Massachusetts  
6 Amherst, MA 01003  
7 [kurose@cs.umass.edu](mailto:kurose@cs.umass.edu)  
8 phone: 413-545-1585  
9 fax: 413-545-1249

10 As with Professor Shenker, Amazon did not contact Professor Kurose to obtain his availability.  
11 Should the Court want Amazon to explain why Professor Kurose would be appropriate as a tech-  
12 nical advisor, Amazon is prepared to do so.

13 Professor Kurose's curriculum vitae is attached as Exhibit A.  
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November 6, 2014

Respectfully submitted,

By: s/ Richard G. Frenkel

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Counsel for Defendants  
AMAZON.COM, INC., AMAZON WEB  
SERVICES LLC, and VADATA, INC.

**CERTIFICATE OF SERVICE**

I, Richard G. Frenkel, hereby certify that on November 6, 2014, I caused the foregoing **AMAZON'S SUBMISSION OF PROPOSED TECHNICAL ADVISOR IN RESPONSE TO COURT'S NOVEMBER 5, 2014 MINUTE ENTRY** to be served on the following parties as indicated below:

|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Jeremy E. Roller</b><br><b>Diana S. Breaux</b><br>YARMUTH WILSDON PLLC<br>818 Stewart Street, Suite 1400<br>Seattle, WA 98101<br><br><i>Attorneys for Plaintiff Telebuyer LLC</i>                                    | <input type="checkbox"/> By United States Mail<br><input type="checkbox"/> By Legal Messenger<br><input checked="" type="checkbox"/> <b>By Electronic CM/ECF</b><br><input type="checkbox"/> By Overnight Express Mail<br><input type="checkbox"/> By Facsimile<br><input type="checkbox"/> By Email [by agreement of counsel]<br>jroller@yarmuth.com<br>dbreaux@yarmuth.com             |
| <b>Brian M. Berliner</b><br><b>Mark Alan Samuels</b><br><b>Xin-Yi Zhou</b><br>O'MELVENY & MYERS LLP<br>400 S. Hope Street, Suite 1050<br>Los Angeles, CA 90071-2899<br><br><i>Attorneys for Plaintiff Telebuyer LLC</i> | <input type="checkbox"/> By United States Mail<br><input type="checkbox"/> By Legal Messenger<br><input checked="" type="checkbox"/> <b>By Electronic CM/ECF</b><br><input type="checkbox"/> By Overnight Express Mail<br><input type="checkbox"/> By Facsimile<br><input type="checkbox"/> By Email [by agreement of counsel]<br>bberliner@omm.com<br>msamuels@omm.com<br>vzhou@omm.com |
| <b>Marc Pensabene</b><br>O'MELVENY & MYERS LLP<br>Times Square Tower<br>7 Times Square<br>New York, NY 10036<br><br><i>Attorneys for Plaintiff Telebuyer LLC</i>                                                        | <input type="checkbox"/> By United States Mail<br><input type="checkbox"/> By Legal Messenger<br><input checked="" type="checkbox"/> <b>By Electronic CM/ECF</b><br><input type="checkbox"/> By Overnight Express Mail<br><input type="checkbox"/> By Facsimile<br><input type="checkbox"/> By Email [by agreement of counsel]<br>mpensabene@omm.com                                     |
| <b>Jonathan Crawford</b><br>O'MELVENY & MYERS LLP<br>2765 Sand Hill Road<br>Menlo Park, CA 94025<br><br><i>Attorneys for Plaintiff Telebuyer LLC</i>                                                                    | <input type="checkbox"/> By United States Mail<br><input type="checkbox"/> By Legal Messenger<br><input checked="" type="checkbox"/> <b>By Electronic CM/ECF</b><br><input type="checkbox"/> By Overnight Express Mail<br><input type="checkbox"/> By Facsimile<br><input type="checkbox"/> By Email [by agreement of counsel]<br>jcrawford@omm.com                                      |

November 6, 2014

By: s/ Richard G. Frenkel

Richard G. Frenkel

LATHAM & WATKINS LLP

# **EXHIBIT A**

## JAMES F. KUROSE

School of Computer Science  
University of Massachusetts  
Amherst, Mass. 01003  
kurose@cs.umass.edu  
<http://www.cs.umass.edu/~kurose>  
ph: 413-545-1585, FAX: 413-545-1249  
October 2014

## EDUCATION

**Doctor of Philosophy**, Computer Science, Columbia University, 1984. Thesis advisors: Mischa Schwartz, Electrical Engineering; Yechiam Yemini, Computer Science  
**Masters of Science**, Computer Science, Columbia University, 1980  
**Bachelor of Arts**, Physics, Wesleyan University, 1978

## WORK EXPERIENCE

**Distinguished University Professor**, U. Massachusetts, 9/04 to present  
**Executive Associate Dean**, College of Natural Sciences, **Senior Faculty Advisor to the Vice Chancellor for Research and Engagement**, 9/09 – 9/11  
**Interim Dean**, College of Natural Sciences and Mathematics, U. Massachusetts, 9/08 – 8/09  
**Visiting Professor**, University of Paris VI (Université Pierre et Marie Curie), 6/05, 6/06, 2/12 – 7/12  
**Visiting Scientist**, Thomson/Technicolor (Paris, Palo Alto) 5/06-6/06, 10/06, 2/12 – 7/12, 9/1 – 12/12  
**Professor**, U. Massachusetts, Dept. Computer Science, 9/96 – 9/04  
**Department Chair**, U. Massachusetts, Dept. Computer Science, 5/98 – 6/01  
**Associate Director and Co-PI**, Center for Collaborative Adaptive Sensing of the Atmosphere (CASA), NSF Engineering Research Center, 9/03 – 8/08  
**Visiting Professor**, Institut National de Recherche en Informatique et en Automatique (INRIA), and Institut Eurecom, INRIA, Sophia Antipolis, France, 9/97 – 9/98  
**Associate Professor**, U. Massachusetts, Dept. Computer Science, 9/90 – 8/96  
**Visiting Scientist**, IBM Thomas J. Watson Research Center, Communications Dept., 9/90 – 8/91  
**Assistant Professor**, U. Massachusetts, Dept. Computer Science, 9/84 – 8/90  
**Consultant**, IBM Thomas J. Watson Research Center, Performance Modeling and Methodology, 9/80 – 5/88

## RESEARCH INTERESTS

Computer networks, protocols and architecture, network measurement, sensor networks, multimedia communication, stochastic modeling and performance evaluation

## AWARDS AND HONORS

### RESEARCH AWARDS AND HONORS

Fellow, IEEE (1997), ACM (2001)  
Distinguished Faculty Lecture, U. Massachusetts, 2014

IEEE Infocom Achievement Award, 2013  
ACM Sigcomm Test-of-Time Award (10-year retrospective best paper), 2008  
Samuel F. Conti Research Fellowship, U. Massachusetts, 2011-2012  
Award for Outstanding Achievement in Research and Creative Activity, U. Massachusetts, 2005  
Faculty Development Award, IBM, 1985, 2005  
Outstanding Investigator Award, DARPA, 2002  
Young Faculty Award, General Electric Foundation, 1985

Best Paper Award (runner up), 2014 ACM Information-centric Networking Conference  
Best Poster/Demo, 2014 ACM MSWiM Conference  
Best Paper Award 2013 IEEE Infocom conference  
Best paper Award, 2013 IEEE Vehicle Technology Conference  
Best Paper Award, 2008 IEEE Multimedia Computing and Networking Conference  
Best Student Paper Award, 2000 ACM Sigmetrics Conference  
Best Paper Award, 1996 ACM Sigmetrics Conference  
Best Paper Presentation Award, 1994 ACM Sigmetrics Conference

Distinguished Lecturer: UC Davis, UC Irvine, Columbia U., Colorado State U., U. Delaware, U. Illinois, Indiana U., Ohio State U., Purdue University, Rensselaer Polytechnic Institute, Texas A&M, U. Toronto, Worcester Polytechnic Institute

Keynote Addresses: ACM Sigcomm Workshop on Information-centric Networks, Asian Internet Engineering Conference, ACM Federated Computing Research Conference (FCRC), Consortium for Computing Sciences in Colleges New England, IEEE COMSWARE, IEEE COMSNETS, EU Workshop on Future Internet Research and Experimentation (FIRE), IEEE Infocom, IEEE Int. Conference on Network Protocols, IEEE Internet Performance Symposium, IEEE Int. Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON), IEEE Int. Conf. Computer Network and Mobile Communications, IEEE Int. Workshop on Quality of Service in MultiService IP Networks, IEEE Distributed Interactive Simulation and Real-Time Workshop, IEEE Real-Time System Symposium, IFIP Networking, Workshop on Embedded Networked Sensors

#### **TEACHING AWARDS AND HONORS**

IEEE Computer Society Taylor Booth Education Medal, 2001  
Outstanding Teaching Award, Northeast Assn. of Graduate Schools, 1996  
Outstanding Teaching Award, College of Natural Sciences and Mathematics, U. Massachusetts, 1995  
Lilly Teaching Fellowship, U. Massachusetts, 1993/94  
Outstanding Teacher Award, National Technological University, awarded each year 1989 – 1998

#### **SERVICE AWARDS AND HONORS**

IEEE Communication Society, Publications Exemplary Service Award, 2007  
IEEE Infocom Outstanding Service Award, 2005  
Massachusetts 2002 Workforce Development Leader of the Year  
U. Massachusetts President's 2002 Service Award  
College of Natural Sciences and Mathematics, U. Massachusetts 2002 Service Award

#### **GRADUATE AND UNDERGRADUATE HONORS**

Graduate: IBM Graduate Student Fellowship  
Undergraduate: Magna cum laude with high honors in Physics, Phi Beta Kappa, Sigma Xi, Bertman Research Prize, Thorndike award, Eastman-Kodak research fellowship

## PROFESSIONAL SERVICE: RESEARCH

NSF CISE Advisory Committee, 2011 – present  
 NSF CISE, Committee of Visitors, Chair, 2014 (through 9/14)  
 Computing Research Association, Board of Directors, 2008 – present  
 NSF CISE, Midscale Infrastructure Committee, Co-Chair, 2012 –2014  
 NSF, Merit Review Advisory Committee, 2011-2012  
 NSF CISE Indo-US Workshops in Pervasive Communications/Computing Collaboration, Co-Chair, 2010 – 2013  
 Panel on Information Technology, National Academy of Sciences, 2011  
 NSF Future Internet Design (FIND) Planning Committee, 2006 – 2008  
 NSF Workshop on Integrated Computing Education and Research, Workshop Co-organizer, 2005  
 NSF Workshop on Science of Networking Design, Workshop Co-organizer, 2004  
 DARPA Panel: NetVision 2014, 2003 – 2004  
 NSF Workshop on Future Networking Research Directions, 2003  
 NSF Workshop on Research Network Testbeds, Workshop Chair, 2002  
 Panel on Networking Research Horizons, National Academy of Sciences, 2001  
 Panel on Army Communications, National Academy of Sciences, 1994 –1995  
 Panel, National Science Foundation, Very High Speed Backbone Network, 1995  
 NSF Blue Ribbon Panel – Engineering Research Centers, 2005 – 2006  
 Proposal Evaluation Panels, NSF, 1987, 1992, 1993, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2005, 2008, 2009, 2013  
  
 Founding Editor-in-Chief, *IEEE/ACM Trans. Networking*, 6/92 – 6/95  
 Editor-in-Chief, *IEEE Trans. Communications*, 6/91 – 9/92  
 Editor, *IEEE/ACM Trans. Networking*, 1995-1997  
 Associate Editor for Networking Systems, *IEEE Trans. Communications*, 1989-1991  
 Guest Editor, *IEEE J. Selected Areas in Communications*, special issues on Network Measurement and Sampling, 12/06; Computer-Aided Modeling of Communication Systems, 12/90, 1/91  
 Director of Journals, IEEE Communications Society, 1/00 – 12/02  
 Steering Committee, *IEEE/ACM Trans. Networking*, 2000 – 2009  
 Editorial Advisory Board, *International Journal of Distributed Sensor Networks*, 2004 – 2010  
  
 ACM Doctoral Dissertation Award Committee, 2014 – present  
 Marconi Society Selection Advisory Committee, 2014 – present  
 IEEE Computer Society, Education Awards Committee, 2012 – present  
 IEEE Alexander Graham Bell Award Committee, 2010 – 2013  
 Nominations and Elections Committee, ACM Sigcomm, 2006 (chair), 2013  
 NSF/CCC CI Fellows Committee, 2009 – 2011  
 ACM Sigmetrics Test of Time Award Committee, 2011  
 Awards Committee, ACM Sigcomm, 2003 – 2004, 2006, 2010  
 ACM Sigcomm Rising Star Award Committee, 2007, 2008, 2010 (chair)  
 ACM Sigcomm Test of Time Award Committee, 2006, 2007 (chair), 2009  
 IEEE Computer Society, Fellows Evaluation Committee, 2009, 2011  
 Nomination and Elections Committee, IEEE Communications Society, 2004 – 2006  
 Board of Governors, IEEE Communications Society, 1996 – 1998, 2000 – 2002  
 Awards Committee, IEEE Communications Society, 1998 – 2000



IEEE Tech. Committee on Computer Communications, Vice Chair 1989 – 1991; Secretary, 1987 – 1989  
Advisory Board, National Center for Telecommunications Technologies, 2001 – 2003

Steering Committee, ACM Internet Measurement Conference, 2012 – present  
Steering Committee, ACM e-Energy Conference, 2013 – 2014  
Steering Committee, ACM CoNext Conference, 2006 – 2008  
Steering Committee, IEEE Global Internet Conference, 2003 – 2008  
Conference Standing Committee, IEEE INFOCOM Conference, 1992 – 2002  
Technical Advisory Committee, ACM SIGCOMM, 1997 – 2001

General Co-Chair, ACM Internet Measurement Conference, Boston, 11/12  
General Co-Chair, IEEE Infocom 2009, Rio de Janeiro, 4/09  
General Co-Chair, IEEE COMSNETS 2008, Bangalore, India, 1/08  
General Co-Chair, ACM CoNext Conference, NY, 12/07  
Technical Program Co-Chair, ACM e-Energy, Berkeley, 5/13  
Technical Program Chair, ACM Internet Measurement Conference 11/04  
Technical Program Co-Chair, ACM SIGCOMM'00, Stockholm, 8/00  
Technical Program Co-Chair, ACM SIGMETRICS'00, Santa Clara, 06/00  
Technical Program Co-Chair, IEEE INFOCOM 92, Florence, Italy, 5/02  
Workshop Co-Chair, INTIMATE Big Data Workshop, Paris, France 06/12  
Workshop Chair, ACM Sigcomm 2010, Delhi India, 08/10  
Workshop Chair, ACM Sigcomm 2002 Workshop on Computer Networking: Curriculum Designs and Educational Challenges, Pittsburgh, 08/02  
Workshop Chair, Program Committee, 2nd Int. IEEE Workshop on Computer-Aided Modeling of Communication Links and Networks, Amherst MA, 09/88  
Program Committee, IEEE INFOCOM Conference, (11 years), ACM SIGCOMM Conference, (11 years), ACM SIGMETRICS Conference, (12 years), ACM Int. Workshop on Network and Operating System Support for Digital Audio and Video, (6 years), ACM CoNEXT, (3 years), ACM Hotnets, (2 years), ACM Internet Measurement Conference (2 years), IEEE Int. Conference on Distributed Computer Systems, (5 years), and numerous other conference and workshop program committees

Research and Science Advisory Boards and Panels:

Board of Trustees and Science Advisory Board, Instituto Madrileño de Estudios Avanzados (IMDEA Madrid) 2007 – present  
Networking Advisory Panel, National Information and Communications Technology Australia (NICTA), 2005 – present  
Scientific Advisory Board, Laboratory for Information, Network and Communication Sciences, Paris, 2009 – present  
Science Advisory Board, Technicolor, 2008 – 2012  
Review panel, Institut Nationale de Recherche en Informatique et en Automatique (INRIA) Networking and Telecommunications, 2000, 2012 (chair)  
Advisory/Review Boards for EU Projects: ResumeNet, ETH Zurich, 2009 – 2012; Future and Emerging Technologies, 2008; Onelab, U. Paris VI, 2009 – present; User-centric Networking, 2013 – present  
Swiss National Center for Competence in Research, 2004 – 2010

## PROFESSIONAL SERVICE: EDUCATION

Advisory Panel/Group/Board, Dept. Computer Science, U. Connecticut, 2003 –2008; Dept. Computer Science, U. Delaware, 2009, Dept. Electrical Engineering and Computer Science, Chinese U. of Hong Kong, 2003 – 2006; College of Computing, Georgia Institute of Technology, 2012; Dept. Computer Science, John Jay College, 2006; School of Engineering, TISL, U. Kansas, 2004, 2010; Dept. Electrical Engineering and Computer Science, U. Michigan, 2004 – 2009; Dept. Computer Science, U. Minnesota, 2003; NIIT University, India, 2009 – 2012; Dept. Computer Science, North Carolina State U., 2004; Dept. Computer Science, Rensselaer Polytechnic U., 2008; Dept. Computer Science, U. Toronto, 2014; Dept. Computer Science, Tufts U., 2013; Dept. Computer Science, Union College, 2001; Dept. Computer Science, Washington U. in St. Louis 2005 –2011, 2014-present

CS Principles AP Advisory Committee, College Board, 2009 – 2012

Faculty Leader, Indo US Collaboration for Engineering Education, Mysore, 2008

ACM Education Council, 2006 – 2008

Director of Education, ACM Special Interest Group on Data Communications, 2003 – 2008

Workshop Chair, NSF CISE Pathways to Revitalized Undergraduate Computing Education (CPATH) New England Workshop, 2006

Workshop Chair, NSF Workshop on Integrative Computing Education and Research Northeast Workshop, 2005

Advisory Board, Internet Engineering Curriculum, CAIDA, 1999 – 2003

## PROFESSIONAL SERVICE: STATE

Massachusetts Green High Performance Computer Center, (MGHPCC), Steering Committee; Research, Education and Outreach Co-chair, 2009 – present

Technology Hub Collaborative (Massachusetts Governor's task force), 2009 – 2012

Holyoke Innovation District Design and Development Task Force, 2010 – 2012

Holyoke Clean Energy Innovation Workshop, Co-chair, 2011

Commonwealth Information Technology Initiative (CITI), Co-founder and Co-chair, 2000 – 2003

Commonwealth Information Technology Initiative (CITI), Advisory Committee, 2002 – 2006

Massachusetts Board of Higher Education, Information Technology Committee, 2000 – 2003

## UNIVERSITY SERVICE

Faculty Trustee, University of Massachusetts Board of Trustees, 2013 – present

Faculty Senate, Rules Committee (ex officio), University of Massachusetts Amherst, 2013 – present

University Strategic Planning Committee, 2001 – 2002, 2013 – present (Research Co-Chair, JTFSO)

University Strategic Planning Committee (Curricular Innovations, member), 2012/13

Search Committee, Director, Center for Teaching and Faculty Development, 2014

Search Committee, IT Manager, Center for Teaching and Faculty Development, 2013

Principal Investigator, RR-03-011, Extramural Research Facilities Construction," National Institutes of Health, J. Kurose (PI), \$7.1M (LGRT Renovation), 9/09 – 6/14

Engineering Dean Search Committee (Chair), 2010/11

Provost Search Committee, (Co-Chair), 2009

Assoc. Director Search Committee, Center for Teaching, 2008

Chair Search Committee, Astronomy, 2007  
 Chair Search Committee, Physics, 2001/02  
 NSM Dean Search Committee, 2000/01, 2005/06  
 UMass System-wide Academic VP Search Committee, 2004, 2005  
 UMass System-wide UMass Online CEO Search Committee, 2000/01  
 UMass SOM Isenberg chair search committee, 1999/2000  
 PEEAS Advisory Board (UMass School of Engineering, 2000/01, 2003/04, 2004/05, 2005/06  
 NSM Awards Committee 2002/03, 2004/05, 2007/08  
 CS Department Awards Committee, 2003/04, 2003/04, 2004/05, 2005/06, 2006/07, 2007/08  
 CS Department Chair Search Committee, 2004 (chair), 2007 (chair)  
 CS Department Personnel Committee, 2002/03 (Chair), 2007/08 (Chair), 2008/09  
 CS Department Strategic Planning Committee 2003/04, 2004/05, 2007/08 (Chair), 2008/09 (Chair), 2009  
 – present (chair, co-chair)  
 Department Executive Committee, 2005/06, 2006/07, 2010/11, 2013/14  
 Department Publicity Committee 2005/06, 2006/07

## PUBLICATIONS: BOOKS

J. Kurose, K. Ross, *Computer Networking: a top-down approach*, Pearson/Addison-Wesley, 6<sup>th</sup> edition, March 2012; 5<sup>th</sup> edition, May 2009; 4<sup>th</sup> edition, May 2007; 3<sup>rd</sup> edition, June 2004; 2<sup>nd</sup> edition, July 2002; 1<sup>st</sup> edition, July 2000; preliminary edition, December 1999.

## PUBLICATIONS: REFEREED JOURNAL PUBLICATIONS

- P. Dutta, A. Seetharam, V. Arya, J. Kurose, M. Chetlur, S. Kalyanaraman, "On Managing Quality of Experience of Multiple Video Streams in Wireless Networks," to appear, *IEEE Trans. Mobile Computing*.
- A. Venkataramani, J. Kurose, D. Raychaudhuri, K. Nagaraja, M. Mao, S. Banerjee, "MobilityFirst: A Mobility-Centric and Trustworthy Internet Architecture," *ACM Computer Communication Review*, July 2014. DOI: <http://dx.doi.org/10.1145/2656877.2656888>
- J. Kurose, "Information-Centric Networking: the evolution from circuits to packets to content," *Computer Networks*, 66: 112–120 (June 2014).
- X. Zhang, G. Neglia, J. Kurose, D. Towsley, H. Wang, "Benefits of Network Coding for Unicast Application in Disruption-Tolerant Networks," *IEEE/ACM Trans. Networking*, vol.21, no.5, pp. 1407-1420, Oct. 2013.
- A. Misra, D. Irwin, P. Shenoy, J. Kurose, T. Zhu, "GreenCharge: Managing Renewable Energy in Smart Buildings," *IEEE Journal on Selected Areas in Communications*, 31(7): 1281 – 1293 (2013).
- X. Zhang, G. Neglia, J. Kurose, D. Towsley, H. Wang, "Benefits of Network Coding for Unicast Application in Disruption Tolerant Networks," *IEEE/ACM Trans. Netw.* 21(5): 1407 – 1420 (2013).
- J. Kurose, "Content-centric networking: technical perspective," *Commun. ACM* 55(1): 116 (2012).
- W. Wei, S. Jaiswal, J. Kurose, D. Towsley, K. Suh, B. Wang, "Identifying 802.11 Traffic from Passive Measurements Using Iterative Bayesian Inference," *IEEE/ACM Transactions on Networking*, 20(2): 325 – 338 (2012).

- M. Uchida, J. Kurose, "An Information-Theoretic Characterization of Weighted  $\alpha$ -Proportional Fairness in Network Resource Allocation," *Info. Sci.* 181(18): 4009 – 4023 (2011).
- W. Wei, B. Wang, D. Towsley, J. Kurose: Model-based identification of dominant congested links. *IEEE/ACM Trans. Netw.* 19(2): 456 – 469 (2011).
- M. Zink, J. Kurose, E. Lyons, D. Pepyne, D. Westbrook, "Closed-loop Architecture for Distributed Collaborative Adaptive Sensing of the Atmosphere: Meteorological Command & Control," *International Journal for Sensor Networks*, Vol.7 No.1/2, 2010.
- D. McLaughlin, D. Pepyne, V. Chandrasekar, B. Philips, J. Kurose, M. Zink et al., "Short-Wavelength Technology and the Potential for Distributed Networks of Small Radar Systems," *Bulletin of the American Meteorological Society*, December 2009.
- W. Wei, K. Suh, B. Wang, Y. Gu, J. Kurose, D. Towsley, S. Jaiswal, "Passive Online Detection of 802.11 Traffic Using Sequential Hypothesis Testing with TCP ACK-Pairs," *IEEE Transactions on Mobile Computing*, Vol. 8, Issue 3, pp. 398 –412, March 2009.
- M. Zink, K. Suh, Y. Gu, J. Kurose, "Characteristics of YouTube Network Traffic at a Campus Network - Measurements, Models, and Implications," *Elsevier Computer Networks*, Vol. 53, No. 4, March 2009.
- W. Wei, B. Wang, C. Zhang, J. Kurose, D. Towsley, "Classification of Access Network Types: Ethernet, Wireless LAN, ADSL, Cable Modem or Dialup?" *Elsevier Journal of Computer Networks*, Vol. 52, No. 17, December 2008.
- D. Yates, E. Nahum, J. Kurose, and P. Shenoy, "Data Quality and Query Cost in Pervasive Sensing Systems", *Pervasive and Mobile Computing*, Volume 4, Number 6, December 2008.
- B. Wang, J. Kurose, P. Shenoy, D. Towsley, "Multimedia Streaming via TCP: An Analytic Performance Study," *ACM Transactions on Multimedia Computing Communications and Applications (TOMCCAP)*, Vol. 4, No. 2, April 2008.
- K. Suh, C. Diot, J. Kurose, L. Massoulie, C. Neumann, D. Towsley, M. Varvello, "Push-to-Peer Video-on-Demand system: design and evaluation", *IEEE Journal on Selected Areas in Communications (JSAC)*, Vol. 25, No. 9, (Dec. 2007), pp. 1706 –1716.
- B. Wang, W. Wei, J. Kurose, D. Towsley, K. Pattipati, Z. Guo, Z. Peng, "Application-layer Multipath Data Transfer via TCP: Schemes and Performance Tradeoffs," *Performance Evaluation*, Vol. 64, Issues 9 –12, pp. 965 – 977, October, 2007.
- X. Zhang, G. Neglia, J. Kurose, D. Towsley, "Performance Modeling of Epidemic Routing," *Computer Networks*, Vol. 51, No. 10 (2007), pp. 2859-2891.
- Y. Guo, K. Suh, J. Kurose, D. Towsley, "P2Cast: Peer-to-peer Patching Scheme for VoD Service," *Kluwer Multimedia Tools and Applications*, Vol. 33, No. 2, May 2007.
- S. Jaiswal, G. Iannaccone, C. Diot, J. Kurose, D. Towsley, "Measurement and Classification of Out-of-Sequence Packets in a Tier-1 IP Backbone," *IEEE/ACM Transactions on Networking*, Vol. 15, No. 1, (Feb. 2007), pp. 54 – 66.
- P. Ji, Z. Ge, J. Kurose, D. Towsley, "A Comparison of Hard-state and Soft-state Signaling Protocols," *IEEE/ACM Transactions on Networking*. Vol. 15, No. 2 (April 2007)., pp. 281 – 294.
- B. Plale, D. Gannon, J. Brotzge, K. Droegemeier, J. Kurose, D. McLaughlin, R. Wilhelmson, S. Graves, M. Ramamurthy, R. Clark, S. Yalda, D. A. Reed, E. Joseph, V. Chandrasekar, "CASA and LEAD: Adaptive

Cyberinfrastructure for Real-Time Multiscale Weather Forecasting," *IEEE Computer*, Vol. 39, No. 11 (Nov. 2006), pp. 56-64.

- D. Figueiredo, B. Liu, Y. Guo, J. Kurose, D. Towsley, "On the Efficiency of Fluid Simulation of Networks," *Computer Networks*, Vol. 50, No. 12 (Aug. 2006), pp. 1974-1994.
- K. Suh, Y. Guo, J. Kurose, D. Towsley, "Locating Network Monitors: Complexity, Heuristics, and Coverage," *Journal of Computer Communications, Elsevier*, Vol. 29, No. 10, pp. 1564-1577, June 2006.
- S. Bhattacharyya, J. Kurose, D. Towsley, R. Nagarajan, "Efficient Rate-Controlled Bulk Data Transfer using Multiple Multicast Groups," *IEEE/ACM Transactions on Networking*, Vol. 11, No. 6 (Dec., 2004).
- D. Rubenstein, S. Kasera, D. Towsley, J. Kurose, "Improving Reliable Multicast Using Active Parity Encoding Services (APES)," *Computer Communications*, Volume 44, Issue 1, January 2004.
- P. Ji, B. Liu, D. Towsley, Z. Ge, J. Kurose, "Modeling Frame-level Errors in GSM Wireless Channels," *Performance Evaluation*, Vol. 55, No. 1, (Jan. 2004).
- M. Bradshaw, B. Wang, S. Sen, L. Gao, J. Kurose, P. Shenoy and D. Towsley, "Periodic Broadcast and Patching Services," *ACM Multimedia Systems Journal*, Vol. 9, no 1, July 2003.
- J. Kurose, J. Lieberherr, S. Ostermann, T. Ott-Boisseau, "Report from the ACM SIGCOMM Workshop on Computer Networking: Curriculum Designs and Educational Challenges," *Computer Communication Review*, Volume 32, Number 5, October/November 2002.
- L. Gao, J. Kurose, D. Towsley, "Efficient Schemes for Broadcasting Popular Video," *ACM Multimedia Systems Journal*, Vol. 8, No. 4 (2002), pp. 284-294.
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- US Patent 6009077, Flow admission control for a router, December 28, 1999.

## COMPLETED PHD STUDENTS AND POST-DOCS, NEXT JOB

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 Ellen Zhang (Co-chair), Fordham University

## RESEARCH GRANTS

- “NeTS: Small: Protecting Privacy While Providing Utility in Published Network Mobility Traces Using Differential Privacy,” NSF, J. Kurose (PI), G. Miklau (Co-I), \$478,372, 9/14 – 8/17.
- “NeTS: Large: Collaborative Research: Location-Independent Networks: Evaluation Strategies and Studies,” NSF, J. Kurose (PI), A. Venkataramani (co-I), joint with K. Sollins, D. Clark, W. Lehr (MIT), \$700,851, 9/14 – 8/17.
- “FIA-NP: Collaborative Research: The Next-Phase MobilityFirst Project - From Architecture and Protocol Design to Advanced Services and Trial Deployments,” NSF, \$1.3M, A. Venkataramani (PI), J. Kurose (co-I), 6/14 – 5/16.
- “Hazard SEES: Next Generation, Resilient Warning Systems for Tornados and Flash Floods,” B. Philips (PI), J. Kurose (Senior Personnel), NSF, \$ 2,998,921, 10/2013 – 9/2017.
- “Mobile Infrastructure-assisted Ad-hoc Network (MIANET): Phase 2,” DARPA/BAE, J. Kurose, PI, \$237K, 6/13 – 6/14.
- “Mobile Infrastructure-assisted Ad-hoc Networks” DARPA/BAE, J. Kurose, PI, \$115,000, 9/12 – 3/13.
- “Analysis and Design of Best-Effort Content-Caching Networks,” NSF, J. Kurose, PI, \$299,999, 9/11 – 8/15.
- “Designing a Smarter and Greener Electric Grid: A Sensor-data Driven Approach,” NSF, J. Kurose (PI), P. Shenoy, \$424,000, 9/1/2011 – 8/14.
- “PC3: US-India Program for Pervasive Communications and Computing Collaboration,” NSF, J. Kurose, PI, \$99,800, 2/11-9/14.
- “FIA: Collaborative Research: MobilityFirst: A Robust and Trustworthy Mobility-Centric Architecture for the Future Internet”, NSF, A. Venkataramani (PI), J. Kurose (Co-I), D. Towsley (co-I), \$7.5M (UMass portion \$1.8M), 9/10 – 8/14.

- "RR-03-011, Extramural Research Facilities Construction," National Institutes of Health, J. Kurose (PI), \$7.1M, 9/09 – 6/14.
- "Sensor Virtualization and Slivering in an Outdoor Wide-Area Wireless GENI Sensor/Actuator Network Testbed," J. Kurose (PI), D. Ganesan, P. Shenoy, M. Zink, BBN Technologies, \$490K, 9/2008 – 9/2011.
- "Green Computing," P. Shenoy (PI), R. Adrion, J. Kurose, UMass President's Office, S&T Initiative, \$200K, 9/09 – 9/11.
- "PIANO/IAMANET," T. Wolf (PI), J. Kurose, D. Towsley (Co-I), DARPA/BAE, \$471K, 12/07-5/09.
- "Underwater Sensor Networks," B. Levine (PI), J. Kurose (Co-I), NSF CRI, \$70K, 5/07 – 5/09.
- "Center for Underwater Sensor Networks," B. Levine (PI), P. Shenoy, J. Kurose (Co-I), UMass President's Office, S&T Initiative, \$200K, 9/07-8/08.
- Gift for Research, NEC Corporation, \$35K, 9/08.
- "Disruption Tolerant Underwater Acoustic Networks," B. Levine (PI), J. Kurose (co-I), ONR, \$32K, 1/07-9/07.
- "International Technology Alliance," IBM Army/UK MOD, D. Towsley (PI), J. Kurose (Co-I), \$3.7M, 9/06 – 8/16. (UMass portion : \$247K/yr)
- "CONCERTO/CBMANET" BAE/ DARPA, 6/06 - 3/07 \$170K (initial increment)
- Integrated Computing Education and Research, (ICER), National Science Foundation, J. Kurose (PI) \$74K 8/05 – 10/07.
- "Postcards from the Edge," National Science Foundation, J. Kurose (PI), joint with D. Raychaudhuri, S. Paul, R. Yates (Rutgers), \$249K (UMass share), 8/06 - 9/10
- "Center for Collaborative Adaptive Sensing of the Atmosphere (CASA)," NSF Engineering Research Center Program, with D. McLaughlin PI (UMass), S. Cruz-Pol (U. Puerto Rico), K. Droegemeier (U. Oklahoma), J. Kurose (UMass), V. Chandrasekar (Colorado State), renewal for three additional year, \$4M/year, 9/08 – 9/11.
- "NeTS-NBD: Network X-ities - Foundations and Applications," J. Kurose, PI, D. Towsley co-I, NSF, \$675,000 Total Award Period Covered: 9/1/05-8/31/10.
- "CNS-MRI: Acquisition of a Laboratory Testbed for Networked Embedded Systems and Sensor Research," P. Shenoy PI, Co-I: D. Ganesan, J. Kurose, NSF, \$370,979, 9/1/05-8/31/08
- IBM Faculty Development Award, IBM, \$30,000, 8/05 – 7/06.
- "ITR: Hyperion – next generation measurement infrastructure and application use," NSF, \$2.7M, 9/15/03-8/31/08, PI, with 5 others.
- Plan for the Blackstone River EFF and the next Generation Cyberinfrastructure, Co-PI, D. Reckhow (PI), NSF, \$86000, 8/04 – 7/05.
- "Gift for Research," Sprint Corp., PI, \$25K, 6/04 (student support).
- "Gift for Research," Nortel, PI, \$15K, 6/04 (student support).
- "Measurement-in-the-Middle," PI, with D. Towsley, National Science Foundation, \$380K, 5/03 – 5/06.
- "Student Travel Grant: IMC 2004," PI, NSF, \$15K.
- "Center for Collaborative Adaptive Sensing of the Atmosphere (CASA)," NSF Engineering Research Center Program, with D. McLaughlin (UMass), J. Colom (U. Puerto Rico), K. Droegemeier (U. Oklahoma), S. Rutledge (Colorado State), Co-PI, approx \$17M, 9/03 – 9/08.
- "Gift for Research," Sprint Corp., PI, \$70K, 6/02 – 6/03.
- "Travel grants for the ACM Sigcomm Workshop on Computer Networking: Curriculum Designs and Educational Challenges," \$20K, NSF, PI, 6/02 – 12/02 (travel grants to be awards to participants).
- "NSF workshop in Networking Research Testbeds," NSF, \$54.5K. I was asked to organize a by-invitation NSF workshop on research testbeds (I am serving as the general chair, and lead a small program committee). The \$54.5K is to cover all attendee costs.



- "Infrastructure to Support Research on Mixed Wired/Wireless Information Systems," with D. Towsley, M. Adler, A. Ganz, D. Goeckel, P. Shenoy, NSF, \$1.394M (including UMass cost share), 9/00-8/05.
- "Commonwealth Information Technology Initiative," with C. Marrett, J. Goldstein and 4 others, \$6.531M (\$1.690M in year 1), Massachusetts Board of Higher Education, 7/00- 6/03.
- "Scalable Quality of Service Control for the Next Generation Internet: Fundamental Challenges and Effective Solutions," with Z. Zhang, L. Gao, R. Guerin, D. Towsley, NSF ITR, \$1,882,115, 9/00 – 8/05.
- "Proxy Services in Wide Area Networks," with D. Towsley, P. Shenoy, L. Gao, J. Rexford, NSF, \$1,010,263, 9/99 – 8/02.
- "A Fluid Methodology for Complex, Large Scale Networks," with W. Gong, D. Towsley, NSF, \$631K, 9/98-8/01.
- "Creating a Flexible Undergraduate Program in Computer Science: Curriculum, Educational Technology, and Pedagogy," with R. Adrion, NSF, 732K, 10/00-8/02, (with UMass cost share).
- "Curriculum Development and Infrastructure for an Advanced Systems Laboratory," PI with 7 others, NSF, \$704K (with UMass cost share), 9/00-9/03.
- "NSF-CNPq: Application Level Adaptation and Control for Retrieval and Delivery of Continuous Media Over the Internet," with D. Towsley, R. Muntz, L. Golubchik, NSF, \$59K, 10/00 – 9/03.
- "Specialized Active Network Technologies for Distributed Simulation," PI with D. Towsley, DARPA, \$704K, 8/99 – 7/02.
- "Fluid Methods for Modeling Large, Heterogeneous Networks," with W. Gong, D. Towsley, DARPA, \$970K, 4/00 – 4/03.
- "Gift for Research," Intel Corp., PI with P. Shenoy, D. Towsley, \$120K, 6/99 – 6/01.
- "Gift for Research," Sprint Corp., PI with D. Towsley, \$120K, 6/99 – 6/01.
- "A High Performance Connection for Research and Education," with J. Dubach, W.R. Adrion, D. Blazis, NSF, \$700K (including UMass match), 3/98-2/99.
- "Smoothing and Congestion Control Algorithms for Stored Continuous Media," PI, with D. Towsley, NSF, \$251,987, 9/98-8/01.
- "A Fluid Simulation Methodology for Complex, Large Scale Networks," with W. Gong, D. Towsley, NSF, \$ 631,606, 9/98-8/01.
- "Active and High Confidence Networks," PI with D. Towsley, DARPA (subcontract with TASC), \$ 463,129, 8/1/97-7/31/00
- "NSF Supplement for Educational Activity," with R. Adrion, \$20K, 6/97 - 6/98.
- "Graduate Student Support for Research in Multicasting" AT&T, \$24K, 1/97-12/97
- "Real-Time Internet Applications - Traffic Characterization," GTE, with D. Towsley, \$24,200, 9/96 - 8/97.
- "Multicast Implementation Study," PI, with D. Towsley and researchers, at TASC, DARPA, \$1.6M 9/95 - 8/98.
- "Infrastructure to Support Research on Networked Multimedia Information Systems," PI (with 6 co-PIs), NSF, \$2.3M (including UMass match), 8-95 - 7/00.
- "Multimedia Communication in Wide-Area Networks," with D. Towsley, NSF, \$450K, 9/95 - 8/98.
- "Simulations of Integrated Communications Systems," with D. Towsley and researchers from AT&T, Bellcore, College of William and Mary, Rutgers. NSF Grand Challenges, \$153K (UMass portion only), 3 years.
- "Prototyping the ECS Fault Management Application Service," with P. Cohen, \$198K, 10/95 - 9/96.
- "Graduate Student Support for Research in Wireless Networks," AT&T, \$24K, 2/95 - 12/95.
- "Internet-based multimedia distance learning software," PI, with D. Towsley and H. Liu (UMass/Dartmouth), \$3.5K, 1 year.
- "Design and Analysis Techniques for Future High-Speed Networks," with D. Towsley, National Science Foundation, \$245K, 3/92 - 2/95.

- "The Effective Use of Multiprocessors for High Performance Network Protocols," with D. Towsley, DARPA, \$747K, 7/92 - 7/95.
- "University Partnership in Research," Motorola Codex, \$73K, 5/92 - 8/95.
- "Using Shared Memory Multiprocessors in High-Performance Networks Protocol Processing," PI (with D. Towsley), National Science Foundation, \$340K, 7/92 - 12/95.
- "Fault-Tolerance and Performance in Real-Time Systems," with D. Towsley and C.M. Krishna, National Science Foundation, \$235K, 8/92 - 1/95.
- "Problems in Survivable Multi-media Networks Office of Naval Research," PI (with D. Towsley and C. Cassandras), \$164K, 1/90 - 9/91.
- "Design and Evaluation of Scheduling Policies for Real-Time and Non-Real-Time Traffic in Communication Networks," PI (with D. Towsley and C. Cassandras), ARPA, \$445K, 8/88 - 12/92.
- "Grant for International Cooperative Research" Japanese Government," \$30K, 6/88 - 6/92.
- "Design and Analysis of Scheduling Policies for Real-Time Computing Systems," with C.M. Krishna and D. Towsley, Office of Naval Research \$563K, 9/87 - 9/92.
- "Telecommunications System Analysis," US Dept. of Transportation, PI, with 5 others, \$13K, 3/87 - 12/88.
- "Resource Contention Management in Parallel Systems," with C. Cassandras and D. Towsley, \$63K, 5/87 - 12/87.
- "Load Balancing in Distributed Computer Systems," with D. Towsley and C.M. Krishna, National Science Foundation, \$159K. 9/87 - 8/89.
- "Problems in Survivable Multi-Media Networks Office of Naval Research," with D. Towsley and C. Cassandras, \$343K, 2/87 - 1/90.
- "The RESQ Modeling Environment," IBM, \$232K, 8/86 - 10/93.
- "Faculty Development Award," IBM, \$60K, 9/85 - 6/91.
- "Graphical Modeling Environments," IBM, \$60K, 11/85 - 8/86
- "Young Faculty Grant," GE Foundation, \$20K, 6/85 - 12/87.
- "Faculty Research Grant," University of Massachusetts, \$2.5K, 6/85 - 3/86.
- "Decentralized Microeconomic Approach to Optimal Resource Allocation in Computer Networks," NSF, \$70K 6/85 - 11/87.